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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,550	10/14/2003	Kumar Sundararajan	021970-000510US	3475

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EXAMINER

HOANG, DANIEL L

ART UNIT	PAPER NUMBER
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2136

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/686,550

Applicant(s)

SUNDARARAJAN ET AL.

Examiner

Daniel L. Hoang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/14/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

CLAIMS PRESENTED

Claims 1-24 are presented.

CLAIM OBJECTIONS

Claim Objections

1. Claim 23 is objected to because of the following informalities: said claim recites that the apparatus further comprises a switch or a router or a virtualization device. As the claim currently stands, it depends on claim 22, which specifically recites that the apparatus does not comprise of a switch or a router or a virtualization device. Examiner interprets this as an error in claim numbering. For purposes of examination, examiner interprets this claim to be dependent on claim 14 rather than claim 22. Appropriate correction is required.

CLAIM REJECTIONS

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 6 and 17 recite the limitation "the fiber channel" in claims 1 and 14. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination, examiner interprets the claim to read as such: "a fiber channel."

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 4, 8-13, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Chow, US PGP No. 20020126672.

As per claim 1, Chow teaches:

Apparatus for security applications, the apparatus comprising:

an interface coupled to a storage network, the interface being adapted to receive a frame from the storage network;

[see fig. 2, element 208]

a classifier coupled to the interface, the classifier being adapted to determine an information type associated with the frame, the type being an initiator, data, or terminator, the classifier being adapted to determine header information associated with the frame; and

[see fig. 2, element 210]

a content addressable memory coupled to the classifier.

[see fig. 2, element 216]

As per claim 2, Chow teaches:

Apparatus of claim 1 wherein the content addressable memory comprises a rule portion and a flow portion, the rule portion being adapted to determine header information and command information from the initiator frame and the flow portion being adapted to provide a flow based upon the header information.

[see paragraph 0052] "Using the search key generated by the method described herein, a lookup or search is done on the classification database contained in the CAM (arrow 826). The resulting content address or entry address 218 (FIG. 2), matching the search key 214 (FIG. 2), obtained from the classification database in CAM 806 is then used to perform a memory read into an associated memory 814 (arrow 828), to determine the policy of the packet received as well as the treatment of that packet, as shown by the arrow 826. Depending on the policy received from the

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CAM controlling hardware 804 and the packet information retrieved from packet memory 810, the egress manager 812 performs some policy action (e.g., metering and shaping, quality of service provisions, packet counting and billing actions, DSCP remarking, CPU actions, etc.), as dictated in the action content database, and sends out the resulting packet 834 to the appropriate network (or receiving port)."

As per claim 4, Chow teaches:

Apparatus of claim 1 wherein the initiator determines a read or a write process.

[see paragraph 44] "The packet parser 504 also reads the incoming packet 208 to determine the type and structure of such packet."

As per claim 8, Chow teaches:

Apparatus of claim 1 wherein the classifier is provided on an integrated circuit chip.

[see fig. 8, element 802]

As per claim 9, Chow teaches:

Apparatus of claim 1 wherein the classifier is adapted to maintain wire speed operation while determining the information type and header information associated with the frame.

[see paragraph 23] "The use of the invention allows flexibility in the choice of packet fields, thereby providing a router with reconfigurable classification functions, without any complex programming. This would reduce the cost of replacing routers, allow routers to be placed anywhere within the Internet topology, and allow routers to simultaneously meet different market requirements."

As per claim 10, Chow teaches:

Apparatus of claim 1 further comprising a flow context random access memory coupled to the classifier, the flow context random access memory being adapted to store a policy based upon a flow, the flow being associated with the header information.

[see fig. 2, element 220]

As per claim 11, Chow teaches:

Apparatus of claim 1 wherein the classifier is used in determining access controls to target volumes & partitions.

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[see paragraph 53] "Once the intelligent software 904 is loaded and executed, the user is provided with an interface enabling such user to define a set of selection criteria. Another embodiment, not illustrated in the figure, is wherein the user 902 has access to the intelligent software, but such software is not directly contained in the user's computer (e.g., software contained in a network computer). The intelligent software may be written in a programming language, such as C, C++, and the like. Various configurations on how such intelligent software may be deployed and implemented are known in the art."

As per claim 12, Chow teaches:

Apparatus of claim 1 wherein the classifier is used in allowing access to specific targets only to authenticated hosts and, in some scenarios applications running on the hosts.

[see above rejection of claim 11, "access to the intelligent software"]

As per claim 13, Chow teaches:

Apparatus of claim 1 wherein the apparatus is operable in a NULL port in a storage area network.

[see paragraph 42] "The resulting content address or entry address 218, matching the search key 214, obtained from the classification database 216 is then used to perform a memory read into an associated memory 220, which contains the specific actions 222 that should be applied to the packet. For example, an Internet Service Provider router that needs to perform packet filtering, policy routing, accounting and billing, traffic rate limiting, and traffic shaping may use the present invention to access certain fields from the incoming packet information, notably, the destination IP, source IP, destination L4 port number, source L4 port number, and protocol."

As per claim 24, Chow teaches:

A method for security applications for storage area networks, the method comprising:

receiving one or more frames at a security apparatus from a storage area network device through a fibre channel, the storage area network device being operated by client device, the client device being coupled to the storage area network device;

[see fig. 2, element 208]

determining a frame type of the one or more frames at the security apparatus;

[see fig. 2, element 210]

creating a flow process through one or more processors if the frame type of an initiator frame;

[see fig. 2 element 216]

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processing one or more subsequent frames associated with the flow process through the one or more processors at wire speed;

[see paragraph 23] "The use of the invention allows flexibility in the choice of packet fields, thereby providing a router with reconfigurable classification functions, without any complex programming. This would reduce the cost of replacing routers, allow routers to be placed anywhere within the Internet topology, and allow routers to simultaneously meet different market requirements."

whereupon the processing is substantially transparent to a user of the client device.

[see paragraph 37, wherein the system administrator configures the system but the processing is implemented by the system and is essentially transparent to the user.]

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 5-7, 14-21, and 22-23, are rejected under 35 U.S.C. 103(a) as being unpatentable over Chow, and further in view of Amara, US Patent No. 6,674,743.

As per claim 3:

Chow teaches:

Apparatus of claim 1 further comprising:

a central processing unit coupled to the classifier;

[see fig. 10, element 1002]

an action processor coupled to the central processing unit;

[see fig. 2, element 220]

a security action processor SAP processor coupled to the central processing unit, the SAP being adapted to process data block by block; and

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[see paragraph 42] "The resulting content address or entry address 218, matching the search key 214, obtained from the classification database 216 is then used to perform a memory read into an associated memory 220, which contains the specific actions 222 that should be applied to the packet.

Chow does not teach:

an encryption/decryption processor coupled the security action processor, the encryption/decryption processor being adapted to encrypt/decrypt the data block by block.

Amara teaches a packet forwarding apparatus that comprises the above limitation not taught by Chow.

[see col. 5, lines 16-20] "Policy engine 126 applies a policy to the internal packet s. Specifically, policy engine 126 examines one or more selector fields present in the internal packet s. Typical selector fields include the source address, destination address, source port, destination port, and protocol type. Policy engine 126 also applies a set of rules specifying the manner in which a given packet should be handled if the selector fields of the given packet match certain predefined criteria. Such handling can include without limitation dropping the packet, logging the packet, encrypting or decrypting the packet."

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the Chow invention to include the encryption/decryption taught by Amara in order to secure data coming in and going out of the system.

As per claim 14:

Chow teaches:

Apparatus for security applications of storage area networks, the apparatus comprising:

an interface coupled to a storage network, the interface being adapted to receive a frame from the storage network;

[see fig. 2, element 208]

a classifier coupled to the interface, the classifier being adapted to determine an information type associated with the frame, the type being an initiator, data, or terminator, the classifier being adapted to determine header information associated with the frame; and

[see fig. 2, element 210]

a content addressable memory coupled to the classifier, the content addressable memory comprises a rule portion and a flow portion, the rule portion being adapted to determine header information and

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command information from the initiator frame and the flow portion being adapted to provide a flow based upon the header information;

[see fig. 2 element 216]

a central processing unit coupled to the classifier;

[see fig. 10, element 1002]

an action processor coupled to the central processing unit;

[see fig. 2, element 220]

a security action processor SAP processor coupled to the central processing unit, the SAP being adapted to process data block by block; and

[see paragraph 42] "The resulting content address or entry address 218, matching the search key 214, obtained from the classification database 216 is then used to perform a memory read into an associated memory 220, which contains the specific actions 222 that should be applied to the packet."

Chow does not teach:

an encryption/decryption processor coupled the security action processor, the encryption/decryption processor being adapted to encrypt/decrypt the data block by block.

Amara teaches a packet forwarding apparatus that comprises the above limitation not taught by Chow.

[see col. 5, lines 16-20] "Policy engine 126 applies a policy to the internal packet s. Specifically, policy engine 126 examines one or more selector fields present in the internal packet s. Typical selector fields include the source address, destination address, source port, destination port, and protocol type. Policy engine 126 also applies a set of rules specifying the manner in which a given packet should be handled if the selector fields of the given packet match certain predefined criteria. Such handling can include without limitation dropping the packet, logging the packet, encrypting or decrypting the packet."

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the Chow invention to include the encryption/decryption taught by Amara in order to secure data coming in and going out of the system.

As per claim 15, Chow teaches:

Apparatus of claim 14 wherein the initiator determines a read or a write process.

[see paragraph 44] "The packet parser 504 also reads the incoming packet 208 to determine the type and structure of such packet."

As per claim 19, Chow teaches:

Apparatus of claim 14 wherein the classifier is provided on an integrated circuit chip.

[see fig. 8, element 802]

As per claim 20, Chow teaches:

Apparatus of claim 14 wherein the classifier is adapted to maintain wire speed operation while determining the information type and header information associated with the frame.

[see paragraph 23] "The use of the invention allows flexibility in the choice of packet fields, thereby providing a router with reconfigurable classification functions, without any complex programming. This would reduce the cost of replacing routers, allow routers to be placed anywhere within the Internet topology, and allow routers to simultaneously meet different market requirements."

As per claim 21, Chow teaches:

Apparatus of claim 14 further comprising a flow context random access memory coupled to the classifier, the flow context random access memory being adapted to store a policy based upon a flow, the flow being associated with the header information.

[see fig. 2, element 220]

As per claims 5 and 16:

Apparatus of claim 1 wherein the content addressable memory comprises at least two MBit.

Applicant does not disclose within the specification as to what size the content addressable memory may comprise. Examiner interprets this as merely a matter of design choice.

As per claims 6, 7, 17, and 18:

The Chow and Amara references have been discussed above. They do not specifically cite that the interface is adapted to receive the frame through a fiber channel in a SCSI format. It would have been obvious to one having ordinary skill in the art at the time the invention was made to add to the Chow and Amara inventions in order to receive frames through a fiber channel in a SCSI format because fiber

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channels increase the distance in which frames can travel and SCSI frames can be transported at higher speeds.

As per claim 22:

Apparatus of claim 14 wherein the apparatus is not a switch or a router or a virtualization device.

[see fig. 2]

As per claim 23:

Apparatus of claim 22 wherein the apparatus further comprises a switch or a router or a virtualization device.

[see fig. 2, element 204]

CONCLUSION

The art made of record and not relied upon is considered pertinent to applicant's disclosure.

POINTS OF CONTACT

- * Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulaney Street
Alexandria, VA 22314

- * Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L. Hoang whose telephone number is 571-270-1019. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel L. Hoang
3/22/07

NASSER MOAZZAMI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100


3,28,07